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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,112	02/16/2001	Hideya Takeo	Q61207	3865

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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT PAPER NUMBER

2621

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,112

Applicant(s)

TAKEO, HIDEYA

Examiner

Hussein Akhavannik

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-19 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 11-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. The cancellation of claim 10 overcomes the Examiner's objection to claim 10, cited in paragraph 3 (first occurrence) of the previous office action.

Response to Arguments

2. Applicant's arguments with respect to claim 1 on page 6, lines 7-10 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments with respect to claims 3, 7, and 13 on page 7, lines 7-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

4. Claim 3-4 and 11-14 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 3 recited further outputting certainty of detection of the suspected anomalous shadow together with the information including the information identifying the suspected anomalous shadow. However, claim 1 requires that the one or more standard parameters be used for distinguishing the suspected anomalous shadow from a normal shadow, which corresponds to the certainty of detection of the suspected anomalous shadow. Claim 1 also requires information including at least information identifying the detected suspected anomalous shadow. Both of the requirements of claim 3 are recited in claim 1 and, therefore, claim 3 does not further limit claim

- 1.

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Claim 4 recites the same limitations as claim 2, which is also dependant on claim 1, and, therefore, claim 4 does not further limit claim 1.

Claim 11 recites the same limitations as claim 5, which is also dependant on claim 1, and, therefore, claim 11 does not further limit claim 1.

Claim 12 recites the same limitations as claim 6, which is also dependant on claim 1, and, therefore, claim 12 does not further limit claim 1.

Claim 13 recites the same limitations as claim 7, which is also dependant on claim 1, and, therefore, claim 13 does not further limit claim 1.

Claim 14 recites the same limitations as claim 8, which is also dependant on claim 1, and, therefore, claim 14 does not further limit claim 1.

5. Claim 15 is objected to because of the following informalities: The second iteration of “and the anomalous shadow detecting means detects the suspected anomalous shadow,” should be deleted as it is redundant. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-8 and 11-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (U.S. Patent No. 6,266,435 B1).

Referring to claim 1,

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- i. Anomalous shadow detecting means for detecting a suspected anomalous shadow from image data descriptive of an inputted image according to a prescribed detection process is illustrated by Wang in figure 1 by the abnormal feature detection means 50. The abnormal feature detection means 50 detects abnormalities 55 from a digitized image 40.
- ii. Image output means for outputting information including at least information identifying the detected suspected anomalous shadow is illustrated by Wang in figure 1 by the annotated map of detected abnormalities 55, which is output on a small TV monitor 200 or on a high resolution TV monitor 400 or on a printout film 500. The information identifying the detected suspected anomalous shadow corresponds to the location information of the detected suspected abnormalities determined by the abnormal feature extraction sub-stage 51, as explained by Wang in column 5, lines 46-48.
- iii. The image output means further outputting values of one or more standard parameters concerning the suspected anomalous shadow together with the information including at least the information identifying the suspected anomalous shadow, wherein each of the one or more standard parameters is a parameter used for distinguishing the suspected anomalous shadow from a normal shadow, and the anomalous shadow detecting means detecting the suspected anomalous shadow by judging whether a probability that a shadow detected according to the prescribed detection process is a malignant tumor is high is explained by Wang in column 5, line 59 to column 6, line 27 and in column 7, lines 47-52. Wang explain that the probability values, corresponding to the parameter used for distinguishing the suspected anomalous shadow from a normal shadow, are displayed in connection with the x-y coordinate information 55, corresponding to the one or more standard parameters concerning the suspected anomalous

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shadow, as part of the annotated map of detected abnormalities. Wang explain that the abnormal detections are selected by comparing the probability values with a probability threshold, corresponding to judging whether a probability that a shadow detected according to the prescribed detection process is a malignant tumor is high.

Referring to claim 2, the image output means being either an image display means or printing means is illustrated by Wang in figure 1 by the small TV monitor 200 or high resolution TV monitor 400 or printout film 500.

Referring to claim 3, the image output means further outputting certainty of detection of the suspected anomalous shadow together with the information including the information identifying the suspected anomalous shadow corresponds to claim 1iii, wherein the probability value corresponds to the certainty of detection of the suspected anomalous shadow and the x-y coordinate information corresponds to the information identifying the suspected anomalous shadow.

Referring to claim 4, this claim corresponds to claim 2.

Referring to claim 5, one or more standard parameters including at least one of calcification density, image density concentration of the suspected anomalous shadow, an output value of an iris filter, and malignancy/benignancy of the suspected anomalous shadow is explained by Wang in column 5, lines 48-50. The standard parameter is explained to be the probability that a shadow is abnormal, which corresponds to the malignancy/benignancy of a suspected anomalous shadow.

Referring to claim 6, this claim corresponds to claim 2.

Referring to claim 7,

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i. One or more standard parameters including at least one of calcification density, image density concentration of the suspected anomalous shadow, an output value of an iris filter, and malignancy/benignancy of the suspected anomalous shadow corresponds to claim 5.

ii. The image output means further outputting certainty of detection of the suspected anomalous shadow together with the information including the information identifying the suspected anomalous shadow corresponds to claim 3.

Referring to claim 8, this claim corresponds to claim 2.

Referring to claim 11, one or more standard parameters including at least one of calcification density, image density concentration of the suspected anomalous shadow, an output value of an iris filter, and malignancy/benignancy of the suspected anomalous shadow corresponds to claim 5.

Referring to claim 12, this claim corresponds to claim 2.

Referring to claim 13, one or more standard parameters including at least one of calcification density, image density concentration of the suspected anomalous shadow, an output value of an iris filter, and malignancy/benignancy of the suspected anomalous shadow and the image output means further outputting certainty of detection of the suspected anomalous shadow together with the information including the information identifying the suspected anomalous shadow corresponds to claim 7.

Referring to claim 14, this claim corresponds to claim 2.

Referring to claim 15,

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- i. An anomalous shadow detecting means for detecting a suspected anomalous shadow from image data descriptive of an inputted image according to a prescribed detection process corresponds to claim 1 i.
- ii. An image output means for outputting information including at least information identifying the detected suspected anomalous shadow corresponds to claim 1 ii.
- iii. The image output means further outputting certainty of detection of the suspected anomalous shadow together with the information including the information identifying the suspected anomalous shadow, and the anomalous shadow detecting means detecting the suspected anomalous shadow, and the anomalous shadow detecting means detecting the suspected anomalous shadow by judging whether a probability that a shadow detected according to the prescribed detection process is a malignant tumor is high corresponds to claim 3.

Referring to claim 16, this claim corresponds to claim 2.

Referring to claim 17, the information identifying the suspected anomalous shadow is either of an image of the suspected anomalous shadow or numerical data descriptive of a position, morphology or size of the suspected anomalous shadow is explained by Wang in column 5, lines 59-63, wherein the information identifying the suspected anomalous shadow is numerical data descriptive of a position of the suspected anomalous shadow (x-y coordinate).

Referring to claim 18, the anomalous shadow detecting means detecting the suspected anomalous shadow by judging whether the probability that the shadow detected according to the prescribed detection process is the malignant tumor is high, prior to the image output means outputting information including the at least information identifying the detected suspected anomalous shadow is explained by Wang in column 5, line 59 to column 6, line 9.

Referring to claim 19, this claim corresponds to claim 18.

Conclusion

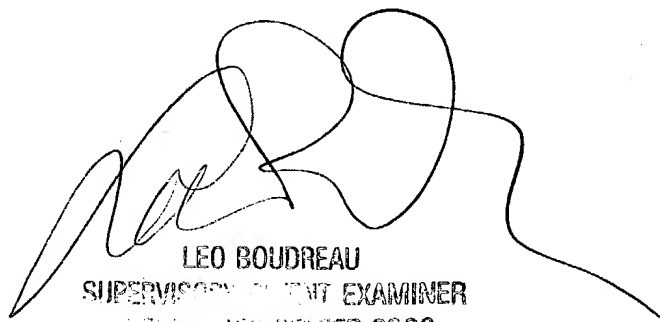
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik
November 13, 2004

H.A.



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